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**APPLICATION FOR
UNITED STATES PATENT**

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BARBEQUE GRILL CLEANER

FIELD OF THE INVENTION

The present invention is generally directed to an apparatus for cleaning barbecue grills. More particularly, the invention is directed to an apparatus for scraping rungs of a barbecue grill to remove cooked-on debris and other unwanted material therefrom.

BACKGROUND OF THE INVENTION

Barbeque grills are common in many households. The barbecue grill allows one to cook food outdoors and thereby avoid making a cooking mess within the household. Furthermore, grilling outdoors enables the griller to enjoy nature and escape the confines of the indoors. However, as many grillers know, after cooking food on the grill, it is prudent to clean the grill. Typically, a user cleans the grill by scraping or brushing food and other cooked-on debris from the grill rungs. There are numerous wire brushes, scrapers, and cleaning solvents available to accomplish this task. However, there is not a grill cleaner which allows the user to thoroughly clean each rung of the grill without a lengthy and detailed effort.

Therefore, a grill cleaning apparatus overcoming these and other drawbacks is needed.

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SUMMARY OF THE INVENTION

An apparatus is provided for cleaning a grill having a number of rungs. The apparatus includes a cleaning end having proximal and distal portions. The distal portion of the cleaning end having first and second diverging cleaning members, each 25 cleaning member having an inner edge, an outer edge, and a terminal end. The apparatus also includes an elongate portion having first and second ends. The second end of the elongate portion terminates substantially at the proximal portion of the cleaning end. The apparatus facilitates cleaning substantially the entire external surface area of an individual rung of the grill without having to disassemble the grill.

BRIEF DESCRIPTION OF THE DRAWINGS

Further advantages of the invention will become apparent by reference to the detailed description of preferred embodiments when considered in conjunction with the drawings, which are not to scale, wherein like reference characters designate like or similar elements throughout the several drawings as follows:

Fig. 1 is a plan view of a grill cleaning apparatus according to one embodiment of the invention;

Fig. 2 is a plan view of a cleaning end of the grill cleaning apparatus according to one embodiment of the invention;

Fig. 3 is a side view of the cleaning end of the grill cleaning apparatus according to one embodiment of the invention;

Fig. 4 is a plan view of a grill cleaning apparatus according to a second embodiment of the invention;

Fig. 5 is a plan view of a cleaning end of the grill cleaning apparatus to the second embodiment of the invention;

Fig. 6 is a side view of the cleaning end of the grill cleaning apparatus to the second embodiment of the invention;

Fig. 7 is a plan view of a grill cleaning apparatus according to another embodiment of the invention; and

Fig. 8 is a side view of a grill cleaning apparatus according to another embodiment of the invention.

DETAILED DESCRIPTION OF THE INVENTION

Referring to Figs. 1-3, a preferred embodiment of a grill cleaning apparatus 10 is shown. As described further below, the apparatus 10 is designed to enable a user to thoroughly clean an individual rung 11 of a common barbecue grill. Propane gas and charcoal are typical barbecue grill types. The grill includes a grilling surface typically consisting of a number of elongate longitudinal cooking rungs. The rungs are arranged in parallel and each rung 11 is spaced at a predetermined distance from an adjacent rung 11.

As described further below, the apparatus 10 has a length sufficient to allow a user to clean an individual rung 11 of a grill without being excessively exposed to heat radiating from the grill and its component parts. The apparatus 10 also enables the user to clean the entire external surface area 13 of an individual rung 11 without

5 having to disassemble or re-orient components of the grill. The apparatus 10 further enables the user to maintain natural and comfortable hand, wrist, and arm orientations while using the apparatus 10 to clean the grill. The apparatus 10 further allows the user to clean an individual grill rung 11 without having to unduly manipulate and burden the hand, wrist, and arm.

10 The apparatus 10 preferably has an overall length of about 23 inches. The apparatus 10 includes a cleaning end 12 extending from an elongate portion 14. The elongate portion 14 and cleaning end 12 are preferably formed as a unitary structure and can be manufactured from a metal, such as brass, steel, titanium, etc. It will be appreciated however, that other materials which can withstand relatively high
15 temperatures and prolonged frictional abrasion can be used as well.

As shown in Figs. 1 and 2, the elongate portion 14 extends from end 16, terminating generally at a proximal portion 18 of the cleaning end 12. The elongate portion 14 preferably includes a circular cross-section. It will be appreciated however, that other cross-sectional configurations of the elongate portion 14 are available as
20 well, such as square, rectangular, triangular, etc. In a most preferred embodiment, the elongate portion 14 has a circular cross-section having a diameter of about 0.3 inches and an overall length of about 15.7 inches.

As shown in Fig. 1, a handle 20 having a length of about 9 inches and a width of about 0.75 inches is fixedly connected to the proximal end 16 of the elongate
25 portion 14 of the apparatus 10. The handle 20 includes a bore 21 having a diameter of about 0.25 inches for retaining a strap, cord, etc. The handle 20 is disposed in opposing relation relative to the cleaning end 12. The handle 20 is also preferably made from a material which does not transmit heat well, i.e. a material having a low thermal conductivity. For example, materials such as wood, plastic, ceramic, and/or
30 composite materials can be used for the handle 20. Again, other materials can be used

for the handle as well and the invention should not be limited by any specific examples or embodiments disclosed herein.

In alternative embodiments, the apparatus 10 can be formed as a unitary structure wherein one end of the elongate portion 14 serves as a handle for gripping and manipulating the grill cleaning apparatus 10. For this embodiment, the handle can have a circular, polygonal, or other cross-sectional configuration, each depending upon the particular desires of the end user. The handle 20 can be ergonomically designed to enhance the feel, comfort, and handling properties to a user of the apparatus 10 when cleaning a grill.

As shown in Fig. 2, the cleaning end 12 of the apparatus 10 includes a distal portion 22 extending from the proximal portion 18. As shown in Fig. 3, the cleaning end 12 has an upper surface 24 and an opposing lower surface 26. The cleaning end 12 has a length of about 1.7 inches and tapers from the proximal portion 18 to the distal portion 22 forming an angle 28 of about eight (8) degrees between the upper and lower surfaces 24 and 26, respectively (see Fig. 3). An angle 30 of about thirty (30) degrees is formed where the elongate portion 14 merges with the cleaning end 12. Preferably, referring again to Fig. 3, the apparatus 10 includes an outer transition 32 of about two hundred and ten (210) degrees and an inner transition 34 of about one hundred and fifty eight (158) degrees formed generally at the merger of the elongate portion 14 and the cleaning end 12. The angled cleaning end 12 allows the user of the apparatus 10 to manipulate the cleaning end 12 in various positions relative to a rung 11, thereby allowing the entire external surface area 13 of an individual rung 11 to be thoroughly cleaned without requiring the user to maintain uncomfortable hand, wrist and/or arm positions while cleaning the grill.

Referring now to Fig. 2, the distal portion 22 includes first and second diverging cleaning members 40 and 42 which preferably diverge from one another at an angle 44 of about eighteen degrees. Preferably, each cleaning member 40, 42 has a length of about 0.55 inches and a width of about 0.25 inches. As shown in Fig. 1, the diverging cleaning members 40 and 42 contact and surround a portion of the external surface 13 when cleaning an individual rung 11 of a grill. The user can manipulate the apparatus 10 both rotationally and linearly (in a back and forth motion) using the

cleaning members 40 and 42, individually, or in unison, to remove debris from the rung 11.

As shown in Fig. 2, the first cleaning member 40 includes an inner edge 46 and an outer edge 48. Likewise, the second cleaning member 42 includes an inner edge 50 and an outer edge 52. A bend 54 is formed between the inner edge 46 of the first cleaning member 40 and the inner edge 46 of the second cleaning member 42. It is preferred that the bend 54 include a radius of about 0.125 inches. As shown in Fig. 3, the width of the cleaning end 12 at the bend 54 is about 0.17 inches. The inner edges 46 and 50 of each cleaning member and the bend 54 are most preferably used to clean the external surface 13 of an individual rung 11, as described above. However, it will be appreciated the inner and outer edges of each cleaning member 40 and 42 and the bend 54 can be used to scrape debris from the external surface of an individual rung 11.

Each cleaning member 40 and 42 includes a tip (or terminal end) 38 and 39, respectively. Referring to the side view of Fig. 3, the tip 38 preferably has a radius of about 0.05 inches and is about 0.1 inches wide. Likewise, as viewed from the side, it is preferred that tip 39 have a radius of about 0.05 inches and is about 0.1 inches wide.

Referring again to Fig. 2, each tip 38, 39 is substantially arcuate, wherein each arcuate tip includes outer and inner radii. Preferably, each arcuate tip 38, 39 has an outer radius of about 0.125 formed at the transition to the outer edge and an inner radius of about 0.0625 formed at the transition to the inner edge of each cleaning member 40 and 42, respectively.

With continuing reference to Fig. 2, an arc 56 is defined between the proximal portion 18 of the cleaning end 12 and the outer edge 48 of the first cleaning member 40. Similarly, an arc 58 is defined between the proximal portion 18 of the cleaning end 12 and the outer edge 52 of the second cleaning member 42. Preferably, each arc 56 and 58 has a radius of about 6 inches. The distance between the outer edges 48 and 52 of the first and second cleaning members 40 and 42 is preferably about 0.75 inches.

The unique design of the grill cleaning apparatus 10 described above, enables a user to clean an individual rung 11 of a grill easily and without having to disassemble or otherwise unduly having to manipulate the apparatus 10.

Referring now to Figs. 4-6, an alternate grill cleaning apparatus 70 is shown. As described further below, the grill cleaning apparatus 70 is designed to enable a user to thoroughly clean an individual rung 11 of a common barbecue grill. As described above, a grill typically includes a grilling surface consisting of a number of elongate 5 longitudinal cooking rungs, where each rung 11 is spaced at a predetermined distance from an adjacent rung 11.

The apparatus 70 has a length allowing a user to clean an individual rung 11 of a grill without being excessively exposed to heat radiating from the grill and its component parts. The apparatus 70 also enables the user to clean the entire external 10 surface area 13 of an individual rung 11 without having to disassemble or re-orient components of the grill. Furthermore, the apparatus 70 tends to allow the user to maintain natural and comfortable hand, wrist, and arm orientations while using the apparatus 70 to clean the grill. That is, the apparatus 70 allows the user to clean the entire external surface of an individual grill rung 11 without having to unduly 15 manipulate and burden the hand, wrist, and arm.

For this embodiment, it is preferred that the apparatus 70 has an overall length of about 23 inches. The apparatus 70 includes a cleaning end 72 extending from an elongate portion 74. The elongate portion 74 and cleaning end 72 are preferably formed as a unitary structure and can be manufactured from a metal, such as brass, 20 steel, titanium, etc. It will be appreciated however, that other materials which can withstand relatively high temperatures and prolonged frictional abrasion can be used as well.

As shown in Fig. 4, the elongate portion 74 extends from proximal end 76, terminating generally at a proximal portion 78 of the cleaning end 72. The elongate 25 portion 74 preferably includes a circular cross-section. It will be appreciated however, that other geometrical cross-sectional configurations of the elongate portion 74 are available as well. The grill cleaning apparatus 70 includes a handle 80 fixedly connected to the proximal end 76 of the elongate portion 74 of the apparatus 70. The handle 80 is disposed in opposing relation relative to the cleaning end 72. The handle 30 80 is also preferably made from a material which does not transmit heat well, i.e. a

material having a low thermal conductivity. For example, materials such as wood, plastic, ceramic, and/or composite materials can be used for the handle 80.

In alternative embodiments, the apparatus 70 can be formed as a unitary structure wherein one end of the elongate portion 74 serves as a handle for gripping and manipulating the grill cleaning apparatus 70. It will be appreciated that the handle 80 can have different cross-sectional configurations, each configuration depending upon the particular desires of the end user. The handle 80 can be ergonomically designed to enhance the feel, comfort, and handling properties to a user of the apparatus 70 when cleaning a grill.

As shown in Figs. 5 and 6, the cleaning end 72 of the apparatus 70 includes a distal portion 82 extending from the proximal portion 78. The cleaning end 72 has an upper surface 84 and an opposing lower surface 86. As shown in the side view of Fig. 5, the cleaning end 72 tapers generally from about the proximal portion 78 to the distal portion 82. An angle 88 of about eight degrees is defined between the upper and lower surfaces 84 and 86 of the cleaning end 72. An angle 90 of about 30 degrees is formed where the elongate portion 74 generally merges with the cleaning end 72 (see Fig. 6).

Preferably, as shown in Fig. 6, the apparatus 70 includes an outer transition 92 of about two hundred and ten (210) degrees and an inner transition 94 of about one hundred and fifty eight (158) degrees formed generally at the merger of the elongate portion 74 and the cleaning end 72. As described below, the angled cleaning end 72 tends to enable the user to manipulate the grill cleaning apparatus 70 in various configurations which enables the user to substantially clean the entire external surface area 13 of an individual rung 11 without requiring the user to maintain uncomfortable hand, wrist and/or arm positions during cleaning.

Referring now to Fig. 5, the distal portion 72 includes first and second cleaning members 96 and 98, respectively. For this embodiment, it is most preferred that the first and second cleaning members 96 and 98 diverge with respect to one another. Preferably, the cleaning members 96, 98 diverge from one another at an angle 107 of about twenty degrees. Each cleaning member 96, 98 has a length of about 0.4 inches, a width of about 0.15 inches. The cleaning members 96 and 98 are

most preferably spaced from one another at a distance of about 0.37 inches. As shown in Fig. 4, the diverging cleaning members 96 and 98 contact and surround a portion of the external surface 13 when cleaning an individual rung 11 of a grill. The user can manipulate the apparatus 70 both rotationally and linearly (in a back and forth motion) 5 using the cleaning members 96 and 98, individually, or in unison, to remove debris from the rung 11.

Referring again to Fig. 5, the first cleaning member 96 includes an inner edge 100 and an outer edge 102. Likewise, the second cleaning member 98 includes an inner edge 104 and an outer edge 106. A seat 108 having a radius of about 0.44 lies 10 between and connects the inner edge 100 of the first cleaning member 96 with the inner edge 104 of the second cleaning member 98. A radius of about 0.40 is defined at the intersection of the seat and each inner edge 100, 104 of each cleaning member 96 and 98. The inner edges 100 and 104 of each cleaning member and the seat 108 are most preferably used to clean the external surface 13 of an individual rung 11, as 15 described above. However, it will be appreciated the inner and outer edges of each cleaning member 96 and 98 and the seat 108 can be used individually or as a combination to scrape debris from the external surface of an individual rung 11.

As shown in Fig. 5, each cleaning member 96 and 98 includes a tip 110 and 112, respectively. Referring now to the side view of the cleaning end 72 as shown in 20 Fig. 6, only the tip 110 is shown. As shown in the side view, the tip 110 preferably has a radius of about 0.032 inches and is about 0.1 inches wide. Viewed from the side, the cleaning end is preferably about 0.15 inches wide at the seat 108. Likewise, as viewed from the side, it is preferred that tip 112 have a radius of about 0.032 inches. With continuing reference to Fig. 5, it is preferred that each tip 110, 112 is 25 substantially arcuate, wherein each arcuate tip includes outer and inner radii. Preferably, each arcuate tip 110, 112 has an outer radius of about 0.125 formed at the transition to the outer edge and an inner radius of about 0.0625 formed at the transition to the inner edge of each cleaning member 96 and 98, respectively.

As shown in Fig. 5, an arc 114 is formed where the elongate portion 74 30 transitions into the outer edge 102 of the first cleaning member 96. Similarly, an arc 116 is formed where the elongate portion 74 transitions into the outer edge 106 of the

second cleaning member 98. Preferably, each arc 114, 116 has a radius of about 6 inches. The distance between the outer edges 102 and 106 of the first and second cleaning members 96 and 98 is about 0.75 inches. The unique design of the grill cleaning apparatus 70 described above, enables a user to clean an individual rung 11 5 of a grill easily and without having to disassemble or otherwise unduly having to manipulate the apparatus 70.

Figures 7 and 8 depict a grill cleaning apparatus 200 according to another embodiment of the invention. As shown in Fig. 7, the apparatus 200 includes a substantially linear seat 202 as part of the cleaning end 204.

10 It is contemplated, and will be apparent to those skilled in the art from the preceding description and the accompanying drawings that modifications and/or changes may be made in the embodiments of the invention. For example, the grill cleaner can be designed and manufactured to clean grill rungs having different cross sectional dimensions, shapes, and/or orientations. Accordingly, it is expressly 15 intended that the foregoing description and the accompanying drawings are illustrative of preferred embodiments only, not limiting thereto, and that the true spirit and scope of the present invention be determined by reference to the appended claims.